

PATENT
IBM Docket No. JP9-2001-0021US1

Listing of Claims:

Claim 1 (Amended) A network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein said server comprises:

a permanent ID information storage section for storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent; and

a polling transmission section for transmitting a packet for polling to the clients by means of broadcast or multicast, wherein the packet contains information about the permanent IDs of the clients that need or need not reply to the polling, and wherein said client comprises:

a permanent ID information storage section for storing its own permanent ID information;

a determination section for determining whether or not to reply based on whether its own permanent ID is contained in the packet for polling that has been received by means of broadcast or multicast; and

a reply section for replying or not replying to the server based on the determination made by said determination section.

Claim 2 (Original) The network system according to claim 1, wherein said polling is associated with non-receipt at said server of an ACK or NACK from said clients in response to transmission of file data from said server to said clients.

PATENT
IBM Docket No. JP9-2001-0021US1

Claim 3 (Amended) A server in a network system that supports unicast as a communication scheme from the server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, comprising:

a permanent ID information storage section for storing permanent IDs of each of the clients, wherein each of the clients is granted ~~a~~ an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent; and

a polling transmission section for transmitting a packet for polling to the clients by means of broadcast or multicast, wherein the packet contains information about the permanent IDs of the clients that need or need not reply to the polling.

Claim 4 (Original) The server according to claim 3, wherein said polling is associated with non-receipt at said server of an ACK or NACK from said clients in response to transmission of file data from said server to said clients.

Claim 5 (Amended) A client in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, comprising:

a permanent ID information storage section for storing its own permanent ID information, wherein each of the clients is granted ~~a~~ an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

a determination section for determining whether or not to reply based on whether its own permanent ID is contained in the packet for polling that has been received by means of broadcast or multicast; and

a reply section for replying or not replying to the server based on the

PATENT**IBM Docket No. JP9-2001-0021US1**

determination made by said determination section.

Claim 6 (Original) The client according to claim 5, wherein said polling is associated with non-receipt at said server of an ACK or NACK from said clients in response to transmission of file data from said server to said clients, and wherein said reply section puts its client's own permanent ID information in a reply packet to said server.

Claim 7 (Amended) A network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein said server comprises:

- a permanent ID information storage section for storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

- a notification of information transmission section for transmitting a packet for notification of information to the clients by means of broadcast or multicast, wherein the packet contains information about the permanent IDs of the clients that need or need not reply to a polling packet sent afterward; and

- a polling transmission section for transmitting a packet for polling to the clients by means of broadcast or multicast after said notification of information transmission section transmits the packet for notification of information, and wherein said client comprises:

- a permanent ID information storage section for storing its own permanent ID information;

- a determination section for determining whether or not to reply to the polling afterward based on whether its own permanent ID is contained in the packet for notification of information that has been received by means of broadcast or multicast; and

PATENT**IBM Docket No. JP9-2001-0021USJ**

a reply section for replying or not replying to said server in response to the packet for polling received by means of broadcast or multicast based on the determination made by said determination section after receipt of the packet of said notification of information.

Claim 8 (Original) The network system according to claim 7, wherein said notification of information is associated with receipt or non-receipt at said server of an ACK or NACK from said clients in response to transmission of file data from said server to said clients, and wherein said polling is associated with non-receipt at said server of an ACK or NACK from said clients in response to the transmission of the file data from said server to said clients.

Claim 9 (Amended) A server in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, comprising:

a permanent ID information storage section for storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

a notification of information transmission section for transmitting a packet for notification of information to the clients by means of broadcast or multicast, wherein the packet contains information about the permanent IDs of the clients that need or need not reply to a polling packet sent afterward; and

a polling transmission section for transmitting a packet for polling to the clients by means of broadcast or multicast after said notification of information transmission section transmits the packet for notification of information.

Claim 10 (Original) The server according to claim 9, wherein said notification of

Page 5

PATENT**IBM Docket No. JP9-2001-0021US1**

information is associated with receipt or non-receipt at said server of an ACK or NACK from said clients in response to transmission of file data from said server to said clients, and wherein said polling is associated with non-receipt at said server of an ACK or NACK from said clients in response to the transmission of the file data from said server to said clients.

Claim 11 (Amended) A client in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, comprising:

- a permanent ID information storage section for storing its own permanent ID information, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

- a determination section for determining whether or not to reply to the polling afterward based on whether its own permanent ID is contained in a packet for notification of information that has been received by means of broadcast or multicast; and

- a reply section for replying or not replying to said server in response to a packet for polling received by means of broadcast or multicast based on the determination made by said determination section after receipt of the packet of said notification of information.

Claim 12 (Original) The client according to claim 11, wherein said notification of information is associated with receipt or non-receipt at said server of an ACK or NACK from said clients in response to transmission of file data from said server to said clients, and wherein said polling is associated with non-receipt at said server of an ACK or NACK from said clients in response to the transmission of the file data from said server to said clients, and wherein said reply section puts its client's own permanent ID

PATENT**IBM Docket No. JP9-2001-0021US1**

information in a reply packet to said server.

Claim 13 (Amended) A network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein said server comprises:

- a permanent ID information storage section for storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

- a polling transmission section for polling the clients from which an ACK or NACK has not been received after file data was transmitted to the clients by means of broadcast or multicast, wherein in a polling mode with non-receipt information, a packet for polling itself or notification of information prior to the polling is transmitted to said network by means of broadcast or multicast, wherein the packet contains permanent IDs of the clients that need reply to the polling, whereas in a polling mode with receipt information, a packet for polling itself or notification of information prior to the polling is transmitted to said network by means of broadcast or multicast, wherein the packet contains permanent IDs of the clients that need not reply to the polling;

- a detection section for detecting a number N of clients from which an ACK or NACK has not been received in response to the transmission of the file data from the server to the clients by means of broadcast or multicast; and

- a switching section for switching between the polling mode with non-receipt information and the polling mode with receipt information in said polling transmission section based on the number N, and

wherein said client comprises:

- a permanent ID information storage section for storing its own permanent ID information;

- a determination section for determining whether or not to reply to the polling

PATENT**IBM Docket No. JP9-2001-0021US1**

based on whether its own permanent ID is contained in the packet for polling itself or notification of information prior to the polling that has been received by means of broadcast or multicast; and

a reply section for replying or not replying to said server in response to the packet for polling received by means of broadcast or multicast based on the determination made by said determination section.

Claim 14 (Original) The network system according to claim 13, wherein the switching section determines, based on N, which makes the number of packets to be transmitted smaller, the polling mode with non-receipt information or the polling mode with receipt information, and based on the determination switches between the polling mode with non-receipt information and the polling mode with receipt information in said polling transmission section.

Claim 15 (Amended) A server in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, comprising:

a permanent ID information storage section for storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

a polling transmission section for polling the clients from which an ACK or NACK has not been received after file data was transmitted to the clients by means of broadcast or multicast, wherein in a polling mode with non-receipt information, a packet for polling itself or notification of information prior to the polling is transmitted to said network by means of broadcast or multicast, wherein the packet contains permanent IDs of the clients that need reply to the polling, whereas in a polling mode with receipt information, a packet for polling itself or notification of information prior to the polling is

PATENT**IBM Docket No. JP9-2001-0021US1**

transmitted to said network by means of broadcast or multicast, wherein the packet contains permanent IDs of the clients that need not reply to the polling;

a detection section for detecting a number N of clients from which an ACK or NACK has not been received in response to the transmission of the file data from the server to the clients by means of broadcast or multicast; and

a switching section for switching between the polling mode with non-receipt information and the polling mode with receipt information in said polling transmission section based on the number N.

Claim 16 (Original) The server according to claim 15, wherein said switching section determines, based on N, which makes the number of packets to be transmitted smaller, the polling mode with non-receipt information or the polling mode with receipt information, and based on the determination switches between the polling mode with non-receipt information and the polling mode with receipt information in said polling transmission section.

Claim 17 (Amended) A client in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, comprising:

a permanent ID information storage section for storing its own permanent ID information; wherein each of the clients is granted an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

a determination section for determining whether or not to reply to the polling based on whether its own permanent ID is contained in the packet for polling itself or notification of information prior to the polling that has been received by means of broadcast or multicast; and

a reply section for replying or not replying to said server in response to the

PATENT**IBM Docket No. JP9-2001-0021US1**

packet for polling received by means of broadcast or multicast based on the determination made by said determination section.

Claim 18 (Amended) A communication method for a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein said server performs the steps of:

storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent; and

transmitting a packet for polling to the clients by means of broadcast or multicast, wherein the packet contains information about the permanent IDs of the clients that need or need not reply to the polling, and

wherein said client performs the steps of:

storing its own permanent ID information;

determining whether or not to reply based on whether its own permanent ID is contained in the packet for polling that has been received by means of broadcast or multicast; and

replying or not replying to the server based on said determination.

Claim 19 (Amended) A communication method for a server in a network system that supports unicast as a communication scheme from the server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, comprising the steps of:

storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent; and

PATENT**IBM Docket No. JP9-2001-0021US1**

transmitting a packet for polling to the clients by means of broadcast or multicast, wherein the packet contains information about the permanent IDs of the clients that need or need not reply to the polling.

Claim 20 (Amended) A communication method for clients in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, comprising the steps of:

storing its own permanent ID information, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

determining whether or not to reply based on whether its own permanent ID is contained in the packet for polling that has been received by means of broadcast or multicast; and

replying or not replying to the server based on said determination.

Claim 21 (Amended) A communication method for a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein said server performs the steps of:

storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

transmitting a packet for notification of information to the clients by means of broadcast or multicast, wherein the packet contains information about the permanent IDs of the clients that need or need not reply to a polling packet sent afterward; and

transmitting a packet for polling to the clients by means of broadcast or multicast

PATENT**IBM Docket No. JP9-2001-0021US1**

after having transmitted the packet for notification of information, and

wherein said client performs the steps of:

storing its own permanent ID information;

determining whether or not to reply to the polling afterward based on whether its own permanent ID is contained in the packet for notification of information that has been received by means of broadcast or multicast; and

based on the determination, replying or not replying to said server in response to the packet for polling received by means of broadcast or multicast after receipt of the packet of said notification of information.

Claim 22 (Amended) A communication method for a server in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, comprising the steps of:

storing permanent IDs of each of the clients, wherein each of the clients is granted ~~a~~ an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

transmitting a packet for notification of information to the clients by means of broadcast or multicast, wherein the packet contains information about the permanent IDs of the clients that need or need not reply to a polling packet sent afterward; and

transmitting a packet for polling to the clients by means of broadcast or multicast after having transmitted the packet for notification of information.

Claim 23 (Amended) A communication method for clients in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, comprising the steps of:

PATENT**IBM Docket No. JP9-2001-0021US1**

storing its own permanent ID information, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

determining whether or not to reply to the polling afterward based on whether its own permanent ID is contained in a packet for notification of information that has been received by means of broadcast or multicast; and

based on the determination, replying or not replying to said server in response to a packet for polling received by means of broadcast or multicast after receipt of the packet of said notification of information.

Claim 24 (Amended) A communication method for a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein said server performs the steps of:

storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

polling the clients from which an ACK or NACK has not been received after having transmitted file data to the clients by means of broadcast or multicast, wherein in a polling mode with non-receipt information, a packet for polling itself or notification of information prior to the polling is transmitted to said network by means of broadcast or multicast, wherein the packet contains permanent IDs of the clients that need reply to the polling, whereas in a polling mode with receipt information, a packet for polling itself or notification of information prior to the polling is transmitted to said network by means of broadcast or multicast, wherein the packet contains permanent IDs of the clients that need not reply to the polling;

detecting a number N of clients from which an ACK or NACK has not been received in response to the transmission of the file data from the server to the clients by

PATENT**IBM Docket No. JP9-2001-0021US1**

means of broadcast or multicast; and

switching between the polling mode with non-receipt information and the polling mode with receipt information based on the number N, and

wherein said client performs the steps of:

storing its own permanent ID information;

determining whether or not to reply to the polling based on whether its own permanent ID is contained in the packet for polling itself or notification of information prior to the polling that has been received by means of broadcast or multicast; and

based on the determination, replying or not replying to said server in response to the packet for polling received by means of broadcast or multicast.

Claim 25 (Amended) A communication method for a server in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, comprising the steps of:

storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

polling the clients from which an ACK or NACK has not been received after having transmitted file data to the clients by means of broadcast or multicast, wherein in a polling mode with non-receipt information, a packet for polling itself or notification of information prior to the polling is transmitted to said network by means of broadcast or multicast, wherein the packet contains permanent IDs of the clients that need reply to the polling, whereas in a polling mode with receipt information, a packet for polling itself or notification of information prior to the polling is transmitted to said network by means of broadcast or multicast, wherein the packet contains permanent IDs of the clients that need not reply to the polling;

detecting a number N of clients from which an ACK or NACK has not been

PATENT**IBM Docket No. JP9-2001-0021US1**

received in response to the transmission of the file data from the server to the clients by means of broadcast or multicast; and

switching between the polling mode with non-receipt information and the polling mode with receipt information based on the number N.

Claim 26 (Amended) A communication method for clients in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, comprising the steps of:

storing its own permanent ID information wherein each of the clients is granted an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

determining whether or not to reply to the polling based on whether its own permanent ID is contained in a packet for polling itself or notification of information prior to the polling that has been received by means of broadcast or multicast; and

based on the determination, replying or not replying to said server in response to a packet for polling received by means of broadcast or multicast.

Claim 27 (Amended) A communication computer program product comprising a computer useable medium having computer program code means recorded thereon for a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein the computer program code means causes a server computer to perform the steps of:

storing permanent IDs of each of the clients, wherein each of the clients is granted ~~a~~ an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent; and

PATENT**IBM Docket No. JP9-2001-0021US1**

transmitting a packet for polling to the clients by means of broadcast or multicast, wherein the packet contains information about the permanent IDs of the clients that need or need not reply to the polling, and

wherein the program causes a client computer to perform the steps of:

storing its own permanent ID information;

determining whether or not to reply based on whether its own permanent ID is contained in the packet for polling that has been received by means of broadcast or multicast; and

replying or not replying to the server based on said determination.

Claim 28 (Amended) A communication computer program product comprising a computer useable medium having computer program code means recorded thereon for a server in a network system that supports unicast as a communication scheme from the server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein the computer program code means causes a server computer to perform the steps of:

storing permanent IDs of each of the clients, wherein each of the clients is granted ~~a~~ an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent; and

transmitting a packet for polling to the clients by means of broadcast or multicast, wherein the packet contains information about the permanent IDs of the clients that need or need not reply to the polling.

Claim 29 (Amended) A communication computer program product comprising a computer useable medium having computer program code means recorded thereon for clients in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme

PATENT**IBM Docket No. JP9-2001-0021US1**

from the server to all the clients in the network, wherein the computer program code means causes a client computer to perform the steps of:

storing its own permanent ID information, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

determining whether or not to reply based on whether its own permanent ID is contained in the packet for polling that has been received by means of broadcast or multicast; and

replying or not replying to the server based on said determination.

Claim 30 (Amended) A communication computer program product comprising a computer useable medium having computer program code means recorded thereon for a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein the computer program code means causes said server computer to perform the steps of:

storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

transmitting a packet for notification of information to the clients by means of broadcast or multicast, wherein the packet contains information about the permanent IDs of the clients that need or need not reply to a polling packet sent afterward; and

transmitting a packet for polling to the clients by means of broadcast or multicast after having transmitted the packet for notification of information, and wherein the program causes said client computer to perform the steps of:

storing its own permanent ID information;

determining whether or not to reply to the polling afterward based on whether its own permanent ID is contained in the packet for notification of information that has

PATENT**IBM Docket No. JP9-2001-0021US1**

been received by means of broadcast or multicast; and

based on the determination, replying or not replying to said server in response to the packet for polling received by means of broadcast or multicast after receipt of the packet of said notification of information.

Claim 31 (Amended) A communication computer program product comprising a computer useable medium having computer program code means recorded thereon for a server in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, the computer program code means causes a server computer to perform the steps of:

storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

transmitting a packet for notification of information to the clients by means of broadcast or multicast, wherein the packet contains information about the permanent IDs of the clients that need or need not reply to a polling packet sent afterward; and

transmitting a packet for polling to the clients by means of broadcast or multicast after having transmitted the packet for notification of information.

Claim 32 (Amended) A communication computer program product comprising a computer useable medium having computer program code means recorded thereon for clients in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein the computer program code means causes a client computer to perform the steps of:

storing its own permanent ID information, wherein each of the clients is granted a

PATENT**IBM Docket No. JP9-2001-0021US1**

an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

determining whether or not to reply to the polling afterward based on whether its own permanent ID is contained in a packet for notification of information that has been received by means of broadcast or multicast; and

based on the determination, replying or not replying to said server in response to a packet for polling received by means of broadcast or multicast after receipt of the packet of said notification of information.

Claim 33 (Amended) A communication computer program product comprising a computer useable medium having computer program code means recorded thereon for a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein the computer program code means causes said server computer to perform the steps of:

storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

polling the clients from which an ACK or NACK has not been received after having transmitted file data to the clients by means of broadcast or multicast, wherein in a polling mode with non-receipt information, a packet for polling itself or notification of information prior to the polling is transmitted to said network by means of broadcast or multicast, wherein the packet contains permanent IDs of the clients that need reply to the polling, whereas in a polling mode with receipt information, a packet for polling itself or notification of information prior to the polling is transmitted to said network by means of broadcast or multicast, wherein the packet contains permanent IDs of the clients that need not reply to the polling;

detecting a number N of clients from which an ACK or NACK has not been

PATENT**IBM Docket No. JP9-2001-0021US1**

received in response to the transmission of the file data from the server to the clients by means of broadcast or multicast; and

switching between the polling mode with non-receipt information and the polling mode with receipt information based on the number N, and

wherein the program causes said client computer to perform the steps of:

storing its own permanent ID information;

determining whether or not to reply to the polling based on whether its own permanent ID is contained in the packet for polling itself or notification of information prior to the polling that has been received by means of broadcast or multicast; and

based on the determination, replying or not replying to said server in response to the packet for polling received by means of broadcast or multicast.

Claim 34 (Amended) A communication computer program product comprising a computer useable medium having computer program code means recorded thereon for a server in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein the computer program code means causes a server computer to perform the steps of:

storing permanent IDs of each of the clients, wherein each of the clients is granted a an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

polling the clients from which an ACK or NACK has not been received after having transmitted file data to the clients by means of broadcast or multicast, wherein in a polling mode with non-receipt information, a packet for polling itself or notification of information prior to the polling is transmitted to said network by means of broadcast or multicast, wherein the packet contains permanent IDs of the clients that need reply to the polling, whereas in a polling mode with receipt information, a packet for polling itself or notification of information prior to the polling is transmitted to said network by means

PATENT**IBM Docket No. JP9-2001-0021US1**

of broadcast or multicast, wherein the packet contains permanent IDs of the clients that need not reply to the polling;

detecting a number N of clients from which an ACK or NACK has not been received in response to the transmission of the file data from the server to the clients by means of broadcast or multicast; and

switching between the polling mode with non-receipt information and the polling mode with receipt information based on the number N.

Claim 35 (Amended) A communication computer program product comprising a computer useable medium having computer program code means recorded thereon for clients in a network system that supports unicast as a communication scheme from a server to one client in a network, multicast as a communication scheme from the server to all the clients in a predetermined group, and broadcast as a communication scheme from the server to all the clients in the network, wherein the computer program code means causes a client computer to perform the steps of:

storing its own permanent ID information wherein each of the clients is granted an unchangeable permanent ID in a textual representation that is mutually identifiable and permanent;

determining whether or not to reply to the polling based on whether its own permanent ID is contained in the packet for polling itself or notification of information prior to the polling that has been received by means of broadcast or multicast; and

based on the determination, replying or not replying to said server in response to the packet for polling received by means of broadcast or multicast.